

**Executive Session**  
**Director's CD-1 Refresh Review**  
**of LBNF/DUNE**

June 2, 2015

Kem Robinson

# In Case of Emergency

- **Emergency Calls:**
  - Call 3131 from a lab phone
  - Call (630) 840-3131 from a cell phone
- **Fire:**
  - Exit Wilson Hall south stairways to ground floor
  - Follow building residents to assembly area
- **Tornado/Severe Weather:**
  - Exit Wilson Hall south stairways to basement refuge area (behind auditorium)
  - Stay in refuge area until “all clear” is announced

# Agenda for Exec Session

- Introductions
- LBNF/DUNE Background
- Charge to Reviewers
- Assignments/Write-ups
- Agenda
- Discussion

# Introductions

- Please introduce yourself:
  - Your name
  - Your home institution or company and role
  - The area you are reviewing or role at this review

# Background

- Since the approval of CD-1 for the Long Baseline Neutrino Experiment (LBNE) in December 2012, the LBNE project has been recast as the Long Baseline Neutrino Facility (LBNF) and the Deep Underground Neutrino Experiment (DUNE) in order to allow for enhanced capability through increased international participation.
  - As a result, LBNF and DUNE have developed updated conceptual designs, cost and schedule estimates, management plans, and a Critical Decision tailoring strategy.
  - The project strategy has been developed to meet the requirements set out in the P5 report and taking into account the recommendations of the European ESPP strategy, adopting a model where the DOE and international funding agencies share costs on the DUNE detectors, and there are large in-kind non-DOE contributions to the supporting infrastructure.

# Charge (excerpt)

- ...assess whether LBNF-DUNE meets the requirements of DOE Critical Decision (**CD-1**) “Approve Alternative Selection and Cost Range” in preparation for the DOE Office of Science “**CD-1 Refresh Review**” planned for July 2015.

# Charge (paraphrased)

- The focus of this review is cost, schedule, management, ES&H, and other identified concerns affecting readiness for the DOE CD-1 Refresh.
- Conceptual Design and Scope
  - Physics and Performance Requirements
  - Conceptual Design Report
  - Design Reviews
- Cost and Schedule
  - Credibility of Estimates
  - Adequate scope, cost, and schedule contingency
  - Funding Profile
  - DOE and in-kind contributions
- Management
  - CD-1 Documents and other requirements
  - Management Teams and Organization
  - Interface Management
  - Critical Decision tailoring strategy
  - Resource management – staffing, procurements
  - ES&H

# Technical Charge Questions

Each **Technical** Subcommittee (Conventional Facilities, Beamline, Cryo Systems, Detectors) will respond to the following questions in their section of the report:

- Have the performance requirements been defined and are they consistent with the Particle Physics Project Prioritization Panel recommendations and the DOE mission need?
- Have independent design reviews been conducted?
- Based on the design reviews, are the conceptual designs sound and likely to meet the physics requirements?
- Are the conceptual designs described in the Conceptual Design Report representative of the entire scope and adequately defined to support the associated cost and schedule ranges?



# Cost and Schedule Charge Questions

The **Cost/Schedule** Subcommittee will respond to the following questions in their section of the report:

- Are the cost and schedule estimates, including life-cycle costs, credible and realistic for this stage of the projects?
- Is adequate scope, cost, and schedule contingency included?
- Is the proposed funding profile supported by DOE and is it adequate to support the cost and schedule ranges?
- Has the project identified all scope for which DOE will be responsible?
- Has a common accounting method been developed to allow for discussions between international funding agencies and for tracking progress of in-kind non-DOE deliverables?

# Management Charge Questions

The **Management** Subcommittee will respond to the following questions in their section of the report:

- Have the required project management documents been updated for the CD-1 refresh?
- Are the management teams, including partnering institutions, sufficiently defined and staffed?
- Have the systems for managing interfaces between LBNF, DUNE, international agencies, and other stakeholders been defined and are they appropriate?
- Has the tailoring strategy for critical decisions been documented and is it justified?
- Has a staffing plan been developed and is it sufficient to complete the design and construction of the projects?
- Is procurement planning sufficiently detailed and coordinated across the organizations involved?
- Has an alternatives analysis been performed in support of the selected alternative?
- Have the LBNF/DUNE management teams met all the requirements of CD-1?

# ESH Charge Questions

The **ESH** Subcommittee will respond to the following questions in their section of the report:

- Are the required environmental approvals and permits on track to meet the project schedule?
- Have the required ESH documents been updated for the CD-1 refresh?
- Is ESH being appropriately addressed given the projects' stages?

# Reviewer Assignments

## **Chairperson**

Kem Robinson, LBL

## **Project Management**

David MacFarlane, SLAC\*

Joe Ingraffia, ANL

Bob Wunderlich, DOE (Retired)

Bill Edwards, LBL

## **Cost and Schedule**

Diane Hatton, BNL\*

Lynda Gauthier, FRIB

Adam Cohen, PPPL

Rick Larson, LBL

## **ES&H**

Jim Tarpinian, LBNL (Retired)\*

Jim Healy, SLAC

## **Beamline**

Rod Gerig, ANL (Retired)\*

Roberto Losito, CERN

Phil Adamson, FNAL

## **Conventional Facilities**

Walter Weinig, Consultant\*

Jeff Sims, SLAC

John Marrington, Consultant

## **Cryogenic Infrastructure**

Joel Fuerst, ANL\*

Rich Schmitt, FNAL

## **Detectors**

Mike Tuts, Columbia\*

Patrick Huber, VT

Giorgio Apollinari, FNAL

Raymond Yarema, FNAL (Retired)

\*Lead

# Reporting Structure

- Each subcommittee will answer their respective charge questions and author findings, comments, and recommendations.
- The draft report (in MS Word) will be used for the closeout presentation
- Answers to the questions and any recommendations should be presented at the closeout with LBNF/DUNE's and Fermilab's management.
  - It is good practice to fact check the report with the project team prior to the closeout.

# Findings, Comments, and Recommendations

- Findings
  - Findings are statements of fact that summarize noteworthy information presented during the review.
- Comments
  - Comments are judgment statements about the facts presented during the review. The reviewers' comments are based on their experiences and expertise.
  - The comments are to be evaluated by the project team and actions taken as deemed appropriate.
- Recommendations
  - Recommendations are statements of actions that should be addressed by the project team.
  - A response to the recommendation is expected and that the actions taken would be reported on during future reviews.

# Write-up

- Write-up template (Review Closeout Presentation Format) is posted on Director's Review Webpage

[http://www.fnal.gov/directorate/OPMO/Projects/LBNF-DUNE/DirRev/2015/20150602/Closeout\\_Presentation\\_Template\\_LBNF\\_DUNE\\_2015.docx](http://www.fnal.gov/directorate/OPMO/Projects/LBNF-DUNE/DirRev/2015/20150602/Closeout_Presentation_Template_LBNF_DUNE_2015.docx)

- There is to be one consolidated write-up for each subcommittee including charge questions.
- Write-ups are to be sent to Lisa Temple ([ltemple@fnal.gov](mailto:ltemple@fnal.gov)) by 9:30 AM Thursday so Closeout Dry Run can start by 10:00 AM.
- A final report will be issued within 1 week after the closeout.

# Today's Agenda Overview

- 9am-2pm today: Plenaries in One West
- 2pm-4:30pm today: Breakouts in various
- 4:30pm-5pm today: Subcommittee executive session in Comitium
- 5pm-6:30pm today: Full committee executive session in Comitium



# Wednesday Agenda Overview

- 8am-noon – Breakout Sessions in various
- 1pm-2pm – Answers to Homework Questions in Comitium
- 2pm-3pm – Subcommittee Executive Sessions
- 3pm-5pm – Full Committee Executive Session in Comitium

# Thursday Agenda Overview

- 8am-10am – Subcommittee Executive Sessions
- 10am-noon – Full Committee Executive Session
- 1pm-3pm – Final Dry Run
- 3pm-4pm - Closeout

# Discussion

- Questions and Answers